

Remarks:

Applicants acknowledge the indication of allowable subject matter existing in original claim 38. Claim 38 has been restated in independent form including all the limitations of the base claim and any intervening claim as new claim 73. Additional new dependent claims from claim 73 are also presented and are believed to be allowable at least on the same basis as claim 73.

Applicants have cancelled claims non-elected 50-72, but reserve the right to advance the same or similar claims in a divisional application. Applicants have indicated that claims 34-37, 39, 40, 42, 43, and 45 are withdrawn, as they were not directed to the elected species, however, they were within group I as defined in the Office Action of November 19, 2007. All of the withdrawn claims are dependent claims. Applicants submit that if the parent claim or claims of the withdrawn claims proves to be allowable over the art of record, then the dependent claims that add further limitations to an allowable claim should be allowed.

Claim 1 has been amended to include the subject matter previously found in claim 17. Applicants submit that claim 1 as amended is patentable over that art of record and request reconsideration and reexamination of that claim and all claims dependent therefrom. Specifically, Applicants request that the Examiner reconsider the rejection of the subject matter of claim 1 as amended on the basis of a combination of Bridger et al. in view of Ueda.

Amended claim 1 specifies that there is disposed on or at the homogeneous semiconductor layer (2, 2f) on the side thereof oriented away from the substrate base, a cover layer (2e) of  $\text{Al}_y\text{Ga}_{1-y}\text{N}$  or  $\text{In}_y\text{Ga}_{1-y}\text{N}$  or  $\text{In}_y\text{Al}_{1-y}\text{N}$  with a relative element

content of  $0 \leq y \leq 1.0$ , in order to form a heterostructure of semiconductor compounds based on nitrides of the main Group III elements. In such a heterostructure, a two-dimensional electron gas forms at the interface between the different materials. The two-dimensional electron gas (2DEG) ensures an adequate charge carrier density which allows for measuring changes in the structure electrically with high precision. This feature is described on page 3 of the originally filed description.

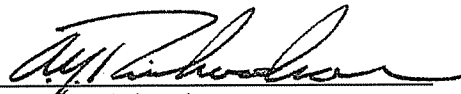
The advantage provided of the subject matter of amended claim 1 is the use of the 2DEG-interface of the heterostructure for measuring changes in the claimed structure. Bridger et al. does not disclose or suggest the use of a heterostructure as a sensing element. Further, someone skilled in the art would not obtain this invention by combining Bridger et al. with Ueda. Ueda describes a semiconductor arrangement for light-emitting diodes and semiconductor lasers. Someone skilled in the art developing a sensor element would not refer to prior art from the field of laser or light-emission technology as the relevant problems in those fields are different than in the field of sensor technology.

Furthermore, Ueda does not describe a two-dimensional electron gas, or any advantages of such a two-dimensional electron gas at all. However, one skilled in the art will only be able to propose the structure of claim 1 if he knows that such a two-dimensional electron gas will form. Thus, one of ordinary skill in the art would not seek to combine the teachings of Ueda with the technology of Bridger et al. to achieve the claimed structure of amended claim 1. The various claims dependent from amended claim 1 are believed to be allowable at least for the same reasons.

Applicants therefore request the reconsideration of claim 1, which in its amended form is believed to place this application as a whole in condition for allowance.

Respectfully submitted,

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